



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1653; Project Identifier MCAI-2022-01193-T; Amendment 39-22370; AD 2023-05-01]

RIN 2120-AA64

Airworthiness Directives; De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. This AD was prompted by reports of flap power unit (FPU) pressure switch failures resulting in flap inoperative events. This AD requires replacing the FPU or replacing the FPU pressure switch and reidentifying the FPU. This AD also prohibits the installation of affected parts. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1653; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the

mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For service information identified in this final rule, contact De Havilland Aircraft of Canada Limited, Dash 8 Series Customer Response Centre, 5800 Explorer Drive, Mississauga, Ontario, L4W 5K9, Canada; telephone North America (toll-free): 855-310-1013, Direct: 647-277-5820; email thd@dehavilland.com; website dehavilland.com.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at regulations.gov under Docket No. FAA-2022-1653.

FOR FURTHER INFORMATION CONTACT: Gabriel Kim, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone (516) 228-7300; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain De Havilland Aircraft of Canada Limited Model DHC-8-400 series airplanes. The NPRM published in the *Federal Register* on December 23, 2022 (87 FR 78881). The NPRM was prompted by AD CF-2022-52, dated September 1, 2022, issued by Transport Canada, which is the aviation authority for Canada (Transport Canada AD CF-2022-52) (also referred to as the MCAI). The MCAI

states there have been increasing reports of FPU pressure switch failures, part number (P/N) 150135-1 or P/N 162660-1, over the past year leading to a high number of flap inoperative events in flight and on the ground. An investigation has determined the root cause to be a deformation of the FPU pressure switch internal mechanism due to hydraulic pressure spikes. If not corrected, a failed FPU pressure switch could lead to a failure of the FPU resulting in abnormal flap landings and increased landing distances, which could require the use of emergency landing procedures and/or airfield diversions. The improved pressure switch, P/N 162660-2, has a restrictor insert in the pressure switch inlet.

In the NPRM, the FAA proposed to require replacing the FPU pressure switch or the FPU. The NPRM also proposed to prohibit the installation of affected parts. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1653.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the cost to the public.

Explanation of Additional Changes

In the NPRM, the FAA inadvertently omitted the operational test of the wing flaps specified in Section 3.C. paragraph (2) of De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022. The MCAI requires this step, which is important to ensure the aircraft is airworthy before it is returned to service. The FAA has therefore revised paragraphs (g)(1) and (2) of this AD to clarify that the operational test is required by this AD.

The FAA has revised paragraph (g)(2) of this AD to clarify that De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022, is the appropriate service information for accomplishing the actions in this AD. The FAA had referred to these bulletins separately, but since they are published as one document, the FAA corrected the citation.

Conclusion

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

The FAA reviewed De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022. This service information specifies procedures for replacing FPU P/N C148656-1 or C148656-2 with a new FPU P/N C148656-3, or replacing FPU pressure switch P/N 150135-1 or 162660-1 within the FPU with a new pressure switch P/N 162660-2 and re-identifying the FPU as P/N C148656-3, and accomplishing an operational test of the wing flaps. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 53 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Up to 6 work-hours X \$85 per hour = \$510	Up to \$3,000	Up to \$3,510	Up to \$186,030

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a

substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-05-01 De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.): Amendment 39-22370; Docket No. FAA-2022-1653; Project Identifier MCAI-2022-01193-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to De Havilland Aircraft of Canada Limited (Type Certificate previously held by Bombardier, Inc.) Model DHC-8-401 and -402 airplanes, certificated in any category, serial numbers 4001 and 4003 through 4633 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code: 27, Flight Controls.

(e) Unsafe Condition

This AD was prompted by reports of flap power unit (FPU) pressure switch failures resulting in flap inoperative events. The FAA is issuing this AD to address FPU pressure switch failures. The unsafe condition, if not addressed, could result in abnormal flap landings and increased landing distances, which could require the use of emergency landing procedures and/or airfield diversions.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Within 8,000 flight hours or 48 months after the effective date of this AD, whichever occurs first: Do the actions specified in either paragraph (g)(1) or (2) of this AD.

(1) Replace FPU part number (P/N) C148656-1 or C148656-2 with P/N C148656-3 and do an operational test of the wing flaps in accordance with Section 3.B. paragraph (1) and Section 3.C. paragraph (2), of the Accomplishment Instructions of De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022.

(2) Replace FPU pressure switch P/N 150135-1 or 162660-1 with P/N 162660-2, reidentify the FPU as P/N C148656-3, and do an operational test of the wing flaps in accordance with Section 3.B. paragraph (2) and Section 3.C. paragraph (2), of the

Accomplishment Instructions of De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022.

(h) Parts Installation Prohibition

As of the effective date of this AD, do not install a FPU having P/N C148656-1 or C148656-2 or a FPU pressure switch having P/N 150135-1 or 162660-1 on any airplane.

(i) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone (516) 228-7300. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or De Havilland Aircraft of Canada Limited's Transport Canada Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(j) Additional Information

(1) Refer to Transport Canada AD CF-2022-52, dated September 1, 2022, for related information. This Transport Canada AD may be found in the AD docket at

regulations.gov under Docket No. FAA-2022-1653.

(2) For more information about this AD, contact Gabriel Kim, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone (516) 228-7300; email 9-avs-nyaco-cos@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) De Havilland Aircraft of Canada Limited Service Bulletin 84-27-75, dated June 23, 2022, including Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022.

Note 1 to paragraph (k)(2)(i): De Havilland issued De Havilland Service Bulletin 84-27-75, dated June 23, 2022, with Collins Aerospace Service Bulletin 27-0029, dated June 13, 2022, attached as one “merged” file for the convenience of affected operators.

(ii) [Reserved]

(3) For service information identified in this AD, contact De Havilland Aircraft of Canada Limited, Dash 8 Series Customer Response Centre, 5800 Explorer Drive, Mississauga, Ontario, L4W 5K9, Canada; telephone North America (toll-free): 855-310-1013, Direct: 647-277-5820; email thd@dehavilland.com; website dehavilland.com.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material that is incorporated by reference at the National

Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on March 2, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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